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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,135

04/21/2006

Teuvo Moilanen

44655-324916

1173

23646 7590 02/03/2010

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EXAMINER

REESE, ROBERT T

ART UNIT

PAPER NUMBER

3654

NOTIFICATION DATE

DELIVERY MODE

02/03/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/563,135	<b>Applicant(s)</b> MOILANEN, TEUVO	
	<b>Examiner</b> ROBERT T. REESE	<b>Art Unit</b> 3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/3/2006, 1/28/2009</u> .                                     | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This communication is a first Office Action Non-Final rejection on the merits.

Claims 1-9, as originally filed, are currently pending and considered below.

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakansson (6,928,976) in view of Reininger (2003/0030431).

As per claim 1, Hakansson discloses: An arrangement (abstract) in connection with a central lubrication system, the arrangement comprising a lubricant vessel (1), a pump unit (Column 5, lines 58-67), a control unit (column 4, lines 57-63), pipe systems (2), a pressure monitor unit (13), at least one feeder (5), the lubricant being arranged to be pumped from the lubricant vessel along the pipe systems to the feeders and further to the objects to be lubricated (depicted in figure 1).

However, Hakansson does not disclose: The feeder is provided with at least one piston which moves due to the influence of the pressure of a lubricant present in the pipe system/object to be lubricated, a movement monitor unit for each feeder in order to

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monitor the operation of the system, and a junction part located in the movement monitor unit outside a pressurized space, wherein the junction part comprises a sensor part which, comprises a fixed permanent magnet to generate a magnetic field, and a sensor for detecting movement of the magnetable piston and an electronics part which processes a signal received from the sensor and produced as a result of a change in the magnetic field caused by the movement of the piston with respect to the sensor part and forwards this processed signal to the control unit.

Reininger discloses apposition detection system with a piston (11) which moves due to the influence of the pressure of a lubricant present in the pipe system/object to be lubricated, a movement monitor unit (14) for each feeder in order to monitor the operation of the system, and a junction part (14) located in the movement monitor unit outside a pressurized space, wherein the junction part comprises a sensor part (15 and 16) which, comprises a fixed permanent magnet (13) to generate a magnetic field, and a sensor (15 and 16) for detecting movement of the magnetable piston (11) and an electronics part (17) which processes a signal received from the sensor and produced as a result of a change in the magnetic field caused by the movement of the piston with respect to the sensor part and forwards this processed signal to the control unit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify lubrication apparatus of Hakansson with the piston and movement monitoring unit of Reininger to provide a more exact measure of the amount of lubricant being provided to the lubrication target.

The combination of Hakansson and Reininger discloses the claimed invention except for the junction part is manufactured from a weakly magnetable material. It would have been obvious to one having ordinary skill in the art at the time of the invention to manufacture the junction part from a weakly magnetable material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

As per claim 2, Reininger teaches that the sensor (15) is a Hall Effect sensor (Paragraph 14).

As per claim 4, Reininger teaches that output of the movement unit is locking so that a detection mode of the piston remains in memory (paragraph 21).

As per claim 5, Reininger teaches that the locked detection mode of the output of the movement monitor unit is releasable by cutting an operating voltage of the sensor for a predetermined time (It is deemed that this type of reset is a well know feature with electronic equipment.)

As per claim 6, Reininger teaches that the movement monitoring unit is entirely located outside a pressurized space of the feeder (Depicted in figure 1).

4. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hakansson (6,928,976) and Reininger (2003/0030431) in view of Hall Effect Sensing and Application by Honeywell.

As per claims 3 and 7, the combination of Hakansson and Reininger disclose all of the structural limits of claim 1 above.

However, the combination of Hakansson and Reininger does not disclose: that the sensor is an analogue Hall sensor (claim 3) and that the electronics part comprises a voltage regulator, a detector- for detecting polarity of voltage, a microcontroller, an output circuit, indicator LED's as well as an amplifier part comprising a differential amplifier circuit and low-pass filters (Claim 7).

Hall Effect Sensing and Application by Honeywell discloses: a sensor is an analogue Hall sensor (page 5) (claim 3) and that the electronics part comprises a voltage regulator (page 4), a detector (the Comparator, Figure 4-26) for detecting polarity of voltage, a microcontroller (page 67), an output circuit (depicted in figure 4-26), indicator LED's (page 51) as well as an amplifier part comprising a differential amplifier circuit (page 4) and low-pass filters (page 57) (Claim 7).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify lubrication apparatus of the combination of Hakansson and Reininger with the analogue Hall sensor and electronics as discussed by the Hall Effect Sensing and Application by Honeywell to provide an proper creation, detection, and processing of the signal to determine the position of the piston.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hakansson (6,928,976), Reininger (2003/0030431) and Hall Effect Sensing and Application by Honeywell, in further view of Diong (2002/0165953).

As per claim 8, the combination of Hakansson, Reininger and Hall Effect Sensing and Application by Honeywell disclose all of the structural limits of claim 7 above.

However, the combination of Hakansson, Reininger and Hall Effect Sensing and Application by Honeywell does not disclose: the output circuit is a potential-free relay contact.

Doing discloses a network architecture for internet appliances which contains an output circuit which is a potential-free relay contact (312, Paragraph 45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the lubrication apparatus of the combination of Hakansson, Reininger and Hall Effect Sensing and Application by Honeywell with the potential-free relay contact of Doing to provide a serial communications port for the output of the sensor.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hakansson (6,928,976), Reininger (2003/0030431), Hall Effect Sensing and Application by Honeywell, and Diong (2002/0165953), in the further view of Melgaard et al. (3,872,473).

As per claim 9, the combination of Hakansson, Reininger, Hall Effect Sensing and Application by Honeywell and Doing disclose all of the structural limits of claim 7 above.

However, the combination of Hakansson, Reininger, Hall Effect Sensing and Application by Honeywell, and Doing does not disclose: the plurality of movement monitor units of the central lubrication system are coupled in series.

Melgaard et al. discloses a monitoring apparatus with a plurality of sensors of the central lubrication system are coupled in series (abstract and figure 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the lubrication apparatus of the combination of Hakansson, Reininger, Hall Effect Sensing and Application by Honeywell, and Doing with the serial connections of Melgaard et al. simplify the design of the apparatus by reducing the amount of wiring involved for the connections of the sensors to the central controller.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hager et al. (3,894,250) discloses a Hall cell position sensor for outboard drive apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT T. REESE whose telephone number is (571) 270-5794. The examiner can normally be reached on M\_F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Q. Nguyen can be reached on (571) 272-6952. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Q. Nguyen/  
Supervisory Patent Examiner, Art Unit 3654

RTR